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U.S. DEPT. OF AGRICULTURE
FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE

MAY 10 1961

Southern Forest Experiment Station, New Orleans, La.

CURRENT SERIAL RECORDS

No. 132

March 1961

INITIAL SURVIVAL OF LOBLOLLY PLANTATIONS

Loblolly pine seedlings in open fields survive less well than those planted under hardwoods. These indications are from a survey of private plantations within a 100-mile radius of Shreveport, Louisiana.

Of the 109 stands sampled, 45 were in Arkansas and 32 each in Louisiana and Texas. All had been established between November 1956 and March 1957. They averaged 21 acres, ranging from 3 to 250. Texas tracts were twice the size of those in Arkansas and Louisiana. Site index varied from 70 to 90; the mean was about 80.

After the first growing season, survival was 61 percent in Texas plantings, significantly less than the 71 percent in Louisiana and Arkansas. These results were probably influenced by above-average rainfall in all 3 States during 1957. Ten-year records of the Louisiana Forestry Commission indicate that initial loblolly survival is 40 percent or less in dry years and 60 to 70 percent in normal ones.

Underplantings averaged 79 percent survival, open plantings 67 percent. Nearly all underplantings received some release. The difference was significant, as was that between the 78 percent for planting by hand and 65 percent by machine. No significant differences were associated with variations in site or month of planting.--W.C. Siegel.

LOBLOLLY UNRESPONSIVE TO FERTILIZER IN ALABAMA TEST

Fertilizing with ammonium nitrate failed to stimulate height growth of loblolly pines in north-central Alabama.

The fertilizer was applied in the spring of 1958 to a 4-year-old plantation of the W.A. Belcher Lumber Company, Birmingham. Four rates were tested: 0, 200, 400, and 600 pounds N per acre.

Trees receiving 200 pounds N grew 8.50 feet in height in 2 years; those in the other treatments grew 8.12 feet. Fertilization had no apparent effect on incidence of tip-moth attack.

Growth was influenced by aspect and position on slope. For all fertilizer treatments combined, average 2-year height growth was 8.0, 8.2, and 8.4 feet for upper, middle, and lower slopes. Trees grew 8.1 feet on slopes facing northwest, and 8.4 on southeast slopes.--*Glendon W. Smalley.*

TOPSOIL MAKES SITE DIFFERENCE FOR CHERRYBARK OAK

Depth of topsoil on loess ridges in the Midsouth is an indicator of site quality for cherrybark oak.

Fourteen study plots were established in stands containing cherrybark oaks of sawtimber size. All plots were on ridges of Loring silt loam, a soil derived from deep loess. They were judged to be equal as to most site factors except that eight plots had more than 6 inches of topsoil, while the others were eroded somewhat and had less. Three tree classifications were used in the comparison: Site index, or height of trees in feet at age 50 years; number of potential 16-foot logs; and grade of bottom log by a 1-2-3 system of rating quality for the production of standard lumber.

By all three criteria, the sites with more than 6 inches of topsoil were very significantly superior. Mean values were:

	<u>Less than 6 inches of topsoil</u>	<u>More than 6 inches of topsoil</u>
Site index	83	101
Number of potential logs	1.89	3.08
Log grade	2.64	1.62

--*W.M. Broadfoot.*

PROLONGED STORAGE OF LONGLEAF CONES WEAKENS SEED

Viability of longleaf seed after one year of storage is substantially reduced if cones are kept in burlap bags for more than 30 days prior to kilning. Other means of storing cones (as in deep bins or shallow trays), which are being replaced by storage in bags, were not considered in the study.

Ripe cones were collected near Alexandria, Louisiana, and stored for periods of 0, 15, 30, 60, and 90 days in 1-bushel burlap bags. The bags were kept in an unheated shed, and placed so that air circulated freely around each one. After extraction in a forced-draft kiln, the separate lots were cleaned to 100 percent soundness. Samples were drawn for initial germination tests and the remaining seeds were dried to 10 percent moisture and stored in airtight containers at 34°F.

Initial viability was unaffected by cone storage up to 60 days: germination averaged 97 percent for these treatments. Seed from cones held 90 days had a significantly lower germination of 84 percent, but was still quite satisfactory for nursery use or direct seeding.

Seed from cones held for 0, 15, and 30 days kept well for one year; viability averaged 90, 91, and 85 percent, respectively. But germination declined to 67 and 43 percent when cones were stored for 60 and 90 days.

These data indicate that, if seed is to be stored, the cones should be held in bags no more than 30 days between collection and extraction. Seed from cones held longer should be used the same year it is collected.--*B.F. McLemore.*

PARTIAL GIRDLING MULTIPLIES SHORTLEAF CONES

Shortleaf pine seed trees in the Ouachita Mountains of Arkansas tripled their cone production the third year after being partially girdled.

Observations were based on 5 pairs of trees. All were between 50 and 80 years of age, had well-formed boles and crowns, and had borne cones in the past. One of each pair was girdled during the winter of 1957-58 by cutting two half-circles (each an inch wide) through the cambium on opposite sides of the stem. The lower cut was about 18 inches above ground, the other about 22 inches. The ends of the girdles overlapped about 1 inch. Cones were counted in September; each tree was examined by three people using binoculars.

In 1958 girdled trees averaged 9 cones each, ungirdled trees 14. No cones were borne in 1959. In 1960, girdled trees produced 750 cones apiece, as compared to 185 for ungirdled. The difference was statistically very significant.

Girdled trees in 1960 had smaller cones, less luxuriant foliage, and shorter needles than ungirdled ones. Seed viability was not determined. Future observations should indicate whether tree vigor has been appreciably affected.--
David R. Bower and James L. Smith.

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*Copies are available at the Southern Station.